

## General Economic State of the Hog Industry

Hog production in 2002 is expected to be about 1 percent above last year, though hog prices are expected to drop considerably from \$46 per hundredweight to about \$36.<sup>1</sup> As in 2001, any unforeseen event affecting slaughter capacity could have significant effects on the industry through lower hog prices.

### Supply Factors

Hog production, like cattle production, is subject to cyclical factors. The length of hog cycles is influenced by the biological reproductive cycle, shifts in consumer demand for pork, prices of feed grains and competitive meats, and other economic factors. In a typical hog cycle, inventories and prices fluctuate, with inventories being built up during times of low hog prices, and reduced during times of high prices. The length of these cycles can be measured in terms of the length of time between peaks (or troughs) in inventories or between peaks (or troughs) in prices. During the latter half of the 20<sup>th</sup> century, hog cycles averaged 4 years and ranged in length between 2 years and 6 years.<sup>2</sup>

According to the National Agricultural Statistics Service (NASS), hog inventories were relatively unchanged between 1999 and 2001, at about 59 million head as of December 1 of each year.<sup>3</sup> Cyclical fluctuations in hog inventories appear to have been dampened in the last few years.

The outbreak of foot-and-mouth disease (FMD) in several countries of the European Community (EU) caused a severe disruption in the worldwide pork market. Hog producers in the United States were faced with preventing an outbreak of FMD domestically. One of many proactive measures taken by groups involved in the U.S. livestock industry was to cancel the 2001 Pork Expo. Measures to prohibit the spread of the disease to the United States by prohibiting the importation of livestock and certain livestock products from high-risk countries were successful, as FMD did not spread to the United States.<sup>4</sup>

### Demand Factors

The United States is a major world producer, consumer, exporter, and importer of pork and pork products. Pork accounts for about one-fourth of domestic meat consumption, with imports accounting for about 5 percent of that consumption. Exports accounted for about 8 percent of domestic production in 2001. Domestic pork consumption in 2002 is expected to be about 2 percent higher than it was in 2001.<sup>5</sup> Pork demand will be subject

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<sup>1</sup> World Agriculture Outlook Board, *World Agriculture Supply and Demand Estimates*, WASDE-385, Office of the Chief Economist, USDA, May 10, 2002.

<sup>2</sup> Stearns, Larry D. and Timothy A. Petry, North Dakota State University Extension Service, "Hog Market Cycles," January 1996, <http://www.ext.nodak.edu/extpubs/ansci/swine/ec1101w.htm>.

<sup>3</sup> National Agricultural Statistics Service, *Quarterly Hogs and Pigs*, NASS-USDA, December 28, 2001 and March 28, 2002.

<sup>4</sup> Testimony of Secretary of Agriculture Ann M. Veneman before the Senate Committee on Agriculture, Nutrition, and Forestry, September 26, 2001; Animal and Plant Health Inspection Service, USDA, "USDA Safeguarding Measures Against Foot-and-Mouth Disease," News Release, July 2001.

<sup>5</sup> World Agricultural Outlook Board, *World Agriculture Supply and Demand Estimates*, WASDE-385, Office of the Chief Economist, USDA, May 10, 2002.

to the same pressures due to weak economic conditions as beef demand. However, decreased beef production, especially if accompanied by signs of strengthening of the economy, would tend to boost demand for pork.<sup>6</sup>

## Trade Prospects

Most demand uncertainty for pork lies in exports. In 2001, two animal diseases affected export demand for pork—BSE and FMD. Exports increased because the outbreak of FMD in other countries caused a decrease in foreign competition in pork. Exports also increased because consumers in countries that had experienced BSE switched to pork.<sup>7</sup> The U.S. exported 1.6 billion pounds of pork in 2001, an increase of 21 percent over 2000. For 2002, U.S. pork exports are forecast at 1.5 billion pounds, down 5 percent from 2001.<sup>8</sup> U.S. pork exports are facing increasing competition in the major markets of Japan, Mexico, and Russia. For example, Brazil is making strides into the Russian pork market, while the EU is regaining some of the markets that were temporarily closed to EU pork products due to FMD.<sup>9</sup> Major pork-exporting countries where the outbreak of FMD occurred in 2001 largely eliminated the disease, and have resumed exportation of pork products. Other nations, such as Taiwan and South Korea, are still facing limitations in their ability to export pork.

The United States imported about 1 billion pounds of pork in 2001, and is projected to import about the same amount in 2002, with an increasing share of the total coming from Canada. The United States imported 5.3 million live hogs from Canada in 2001, 60 percent of which were feeder pigs destined primarily for the Corn Belt. ERS projects that the United States will import about 5.8 million hogs in 2002, with feeder pigs comprising over 60 percent.<sup>10</sup>

## Outlook for Hog Producers

Despite operating profitably over the past several quarters, hog producers still seem hesitant to expand their operations. Based on the market hog inventory, pig crops, and farrowing intentions reported by USDA in March, ERS predicts that commercial hog slaughter is expected to be slightly higher in 2002 than in 2001.<sup>11</sup> Commercial pork production in 2002 is forecast to be about 2 percent above that in 2001. The average dressed weight in 2002 is expected to rise about 1 pound due to the upward trend in weights and low feed prices.<sup>12</sup>

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<sup>6</sup> Gustafson, Ron, "The Outlook for Livestock and Poultry," presentation at Agricultural Outlook Forum 2002, ERS-USDA, February 22, 2002.

<sup>7</sup> Mintert, James, Kentucky State University Livestock Market Update, January 16, 2002.

<http://www.agecon.ksu.edu/livestock/Livestock%20Update%20Newsletters/K-State%20Ag%20Update.html>

<sup>8</sup> World Agricultural Outlook Board, *World Agriculture Supply and Demand Estimates*, WASDE-385, Office of the Chief Economist, USDA, April 10, 2002.

<sup>9</sup> USDA Foreign Agricultural Service, *Livestock and Poultry: World Markets and Trade*, DL&P 2-01, October 2001.

<sup>10</sup> Economic Research Service, *Livestock, Dairy, and Poultry Outlook*, LDP-M-93, ERS-USDA, March 13, 2002.

<sup>11</sup> Economic Research Service, *Livestock, Dairy, and Poultry Outlook*, LDP-M-94, ERS-USDA, April 23, 2002.

<sup>12</sup> Gustafson, Ron, "The Outlook for Livestock and Poultry," presentation at Agricultural Outlook Forum 2002, ERS-USDA, February 22, 2002.

## Outlook for Pork Packers

As noted above with regard to beef packers, the outlook for pork packers in 2002 is mixed due to uncertainties about domestic demand, export potential, and the effects of the Russian ban on poultry products. The private research and analysis firm Sparks Companies, Inc. reports that pork packers are realizing large slaughter margins currently. Sparks projects that wholesale meat values will decline in coming months, although proportionately less than projected declines in live hog prices.<sup>13</sup> While the relatively larger decline in hog prices than in meat prices should contribute to pork packer profitability in 2002, projected lower hog prices will have a negative impact on returns of packers that are also engaged in hog production.

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<sup>13</sup> Sparks Companies, Inc., "Hog and Pork Comments," *Morning Comments*, April 24, 2002; Sparks Companies, Inc., "Cash Hog and Pork Prices," *Livestock Desk Reference*, April 23, 2002.

# Changing Business Practices in the Hog Industry

## Structure of Hog Production and Pork Packing

Pork produced in the United States comes from either young hogs—barrows (males) and gilts (females)—raised for their meat, or mature hogs—sows and boars—culled from the breeding herd. Meat from barrows and gilts is used for both fresh whole-muscle cuts and for further processing into bacon, sausages, or other prepared foods. The meat from sows and boars is used almost exclusively in further processing.

A sow can produce an average of a little more than two litters per year, each consisting of an average of nearly nine pigs. Following a 114-day gestation period, an average of 176 days is required to grow a pig to slaughter weight. Typically, 210 to 240 days are required to grow a gilt, or young female hog, to breeding age. The weaning age of pigs is an essential element in determining the productive potential for sows. Sows can be bred for a new litter shortly after the pigs from the previous one are weaned. On average, pigs can be weaned at about 21 days of age.<sup>1</sup>

Until the 1970s and 1980s, hogs typically were produced on farrow-to-finish farms—farms with a breeding herd where the pigs are raised from farrowing (birth) to market weights. While farrow-to-finish operations are still the most prevalent, hog production has been shifting to specialized farms using three separate types of facilities. The first is used for breeding, gestation, and farrowing. After weaning, the pigs are moved to a second site, called a nursery facility, where they receive a special diet and care. Once they reach 8–10 weeks of age and 40–60 pounds, the pigs are transported to the third site, the finishing facility, where they are fed to their market weight of around 260 pounds. Each of these facilities is geographically separated from the others to reduce the risk of disease outbreaks. Separation of the facilities also allows producers to improve their use of labor and facilities by specializing in a single type of enterprise.<sup>2</sup>

Each of the sites used for the three stages of production may be under common ownership, or they may be owned by separate firms. Some producers own and raise pigs from farrowing to market weights. Others specialize in only a portion of the pig production process, such as the farrowing stage or the finishing stage. If sites for the succeeding stages are under common ownership, the pigs are transferred from one site to another without a change in ownership of the animals. If different firms own sites for succeeding stages, the pigs may either be sold to the downstream producer, who raises and markets them, or they may be placed there under a production contract. Under a production contract, the producer owning the finishing facility agrees to raise pigs under specified conditions and is paid for services rendered. The owner of the pigs (the contractor) may be a packer or an affiliate or subsidiary of a packer; a producer that

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<sup>1</sup> Economic Research Service, Briefing Room, "Hogs: Background," January 2000. <http://www.ers.usda.gov/briefing/hogs/background.htm> (January 23, 2002).

<sup>2</sup> Martinez, S. W., *Vertical Coordination in the Pork and Broiler Industries: Implications for Pork and Chicken Products*, Agricultural Economic Report No. 777, ERS-USDA, April 1999.

specializes in another phase of production, such as a farrowing or nursery operation; or an agricultural corporation not involved in hog slaughter, such as a feed company.

Barrows and gilts are produced in either confinement or, to a lesser degree, pasture (free range) in one of six types of production operations: (1) farrowing farms that sell weaned pigs, weighing up to 15 pounds, to nursery or finishing farms; (2) farrow-to-nursery farms that sell feeder pigs weighing up to 50 pounds to finishing farms; (3) nursery farms that buy weaned pigs and sell feeder pigs weighing up to 50 pounds to finishing farms; (4) wean-to-finish farms that feed pigs weighing up to 15 pounds to their market weight of around 255 pounds; (5) finishing farms that feed pigs weighing up to 50 pounds to market weight; and (6) farrow-to-finish farms that include all stages of production from breeding through finishing to market weight.

Over 96 percent of the hogs slaughtered in the United States are barrows and gilts. Cull breeding stock account for the remaining slaughter.<sup>3</sup> Barrows and gilts typically are marketed directly to packing plants, or to one of several regional buying stations established by a packer that are located near producer operations. Sows and boars generally are marketed through auction markets or dealers to packing plants. Meat products from packing plants are sold to processors, retailers, and foodservice operators as whole-muscle cuts, such as fresh or processed primals, subprimals, or case-ready pork; and as processed products, such as hams, bacon, and hot dogs. Case-ready refers to retail cuts that are packaged at packing plants and shipped ready for the meat case. Both the whole-muscle cuts and, especially, the processed products frequently are sold under brand names. A processor may sell products under its own brand names, or may package products under a retailer's brand or the brand of a third party.

Most hog packing plants in the United States are located in Midwestern States, including Illinois, Iowa, Minnesota, Nebraska, and South Dakota, and in Southeastern States including North Carolina and Virginia. However, the geographic distribution of hog production is changing. Hog production has expanded into the South and nontraditional areas of the West.<sup>4</sup> Although hog production, like other animal production, is increasingly subject to environmental laws, research has not established a link between environmental laws and location of hog production.<sup>5</sup> Hog operations tend to move to locations where economic efficiencies can be exploited.<sup>6</sup>

### **Increasing Litter Size, Litters Per Sow, Carcass Weights**

Changing swine genetics and farm management practices have improved many aspects of production efficiency. Litter size, litters per sow, and carcass weights have all increased

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<sup>3</sup> Livestock Marketing Information Center, Lakewood, Colorado, "Analysis and Comments," Number 4, January 26, 2001.

<sup>4</sup> Economic Research Service, "Environmental Regulation & Location of Hog Production," *Agricultural Outlook*, ERS-USDA, September 2000.

<sup>5</sup> Metcalfe, M, "Location Of Production And Endogenous Water Quality Regulation: A Look At The U.S. Hog Industry," 1999 American Agricultural Economics Association Annual Meetings selected paper, April 27, 1999; Park, D., A. Seidl, S. Davies, and W.M. Frasier, "Environmental Policy Influences on Livestock Stocking and Location Decisions," Paper presented at the Western Agricultural Economics Association Annual Meetings, Vancouver, B.C. June 29–July 1, 2000; Economic Research Service, "Environmental Regulation & Location of Hog Production," *Agricultural Outlook*, ERS-USDA, September 2000.

<sup>6</sup> Economic Research Service, "Environmental Regulation & Location of Hog Production," *Agricultural Outlook*, ERS-USDA, September 2000.

with genetic improvements. From 1996 through 2001, the average number of pigs per litter rose from 8.50 to 8.80 (table 4).

Table 4.—Average number of pigs per litter, 1995–2001

1995	1996	1997	1998	1999	2000	2001
8.32	8.50	8.66	8.71	8.79	8.83	8.80

Source: National Agricultural Statistics Service, *Hogs & Pigs*, NASS-USDA, December issues, 1995–2001.

Larger operations have consistently produced larger litters. In 2001, the largest volume producers, on average, produced 1.2 more pigs per litter than the smallest volume producers (table 5).

Table 5.—Average number of pigs per litter by size of operation, 1996–2001

Year	Pigs per litter on operations having—					
	1–99 head	100–499 head	500–999 head	1,000–1,999 head	2,000–4,999 head <sup>1</sup>	5,000 or more head
1995	7.22	7.76	8.02	8.30	8.71	NA
1996	7.35	7.90	8.13	8.43	8.78	NA
1997	7.43	7.88	8.18	8.48	8.63	8.95
1998	7.38	8.03	8.33	8.53	8.78	8.93
1999	7.65	8.13	8.30	8.58	8.78	8.95
2000	7.58	7.98	8.30	8.63	8.78	8.98
2001	7.48	7.95	8.18	8.60	8.78	8.93

NA denotes not available.

<sup>1</sup> 2,000 or more head in 1995 and 1996.

Source: National Agricultural Statistics Service, *Hogs & Pigs*, NASS-USDA, December issues, 1996–2001.

The average number of litters per sow per year has increased from 1.64 in 1996 to 1.77 in 2001 (table 6).

Table 6.—Annual litters per sow, 1995–2000

1995	1996	1997	1998	1999	2000
1.68	1.64	1.75	1.73	1.74	1.77

Source: National Pork Board, *Pork Facts 2001/2002*.

Improved genetics have also led to heavier carcasses. The average carcass weight of barrows and gilts slaughtered at federally inspected plants increased by 10 pounds, or 5.5 percent, between 1995 and 2000 (table 7).

Table 7.—Average carcass weight of federally inspected barrows and gilts, 1995–2000

1995	1996	1997	1998	1999	2000
<u>Pounds</u>					
181	181	185	185	187	191

Source: National Agricultural Statistics Service, "Livestock Slaughter: Average Dressed Weight, Federal Inspection by Classification and Month, United States," *Livestock Slaughter Annual Summary*, NASS-USDA, selected years.

### Herd Size

Hog production has moved toward fewer and larger vertically integrated operations. The number of operations with fewer than 100 hogs on hand has decreased from 96,730 (3.5 percent of the U.S. hog inventory) in 1995 to 46,012 (1.0 percent of the hog inventory) in 2001 (table 8). Inventory held by operations with 5,000 or more hogs rose from 27.5 percent of the Nation's hog inventory in 1995 to 52.8 percent in 2001. Over the same period, the total number of hog production operations declined by 87,320, a drop of 52 percent.

Table 8.—Number of operations and percentage of hog inventory by size of operation,<sup>1</sup> 1995–2001

Head	1995	1996	1997	1998	1999	2000	2001
1–99	96,730 (3.5)	81,930 (3.0)	69,460 (2.0)	61,670 (2.0)	52,880 (1.5)	48,210 (1.0)	46,012 (1.0)
100–499	44,140 (18.0)	35,585 (15.0)	28,095 (11.0)	27,135 (9.5)	22,810 (8.0)	17,755 (6.0)	15,415 (5.0)
500–999	15,160 (17.0)	12,960 (15.0)	11,670 (12.0)	11,350 (11.0)	9,255 (9.0)	7,630 (8.0)	7,226 (7.5)
1,000–1,999	7,240 (17.0)	6,830 (16.0)	6,755 (14.5)	6,825 (14.0)	6,500 (13.0)	5,850 (13.0)	5,494 (12.0)
2,000–4,999	3,615 (17.0)	3,490 (17.0)	4,355 (20.5)	4,765 (21.5)	5,110 (22.0)	4,825 (21.5)	4,779 (22.0)
5,000 or more	1,385 (27.5)	1,585 (34.0)	1,825 (40.0)	1,905 (42.0)	2,055 (46.5)	2,090 (50.5)	2,204 (52.5)
Total	168,450	142,380	122,160	113,650	98,610	86,360	81,130

<sup>1</sup> An operation is any place with hogs and pigs on hand at any time during the year. Percentage of inventory in parentheses.  
Source: National Agricultural Statistics Service, *Hogs & Pigs*, NASS-USDA, December issues, 1996–2001.

### Contract Production

In the 1970's and 1980's producers commonly operated farrow-to-finish operations. Specialized farrowing (breeding sows and producing piglets), nursery, or finishing operations have become more common, with many producers raising hogs in specialized

operations under production contracts available from one of several contractors.<sup>7</sup> A survey of 8,400 farmers in February and March of 2001 showed that producers using production contracts for at least some of their production accounted for 39 percent of all farrowed pigs, down 1 percent from 1997, and 55 percent of all finished (market-ready) hogs, up 11 percentage points from 1997.<sup>8</sup> Pigs raised for others under contract accounted for 22 percent of all farrowings, up 5 percentage points from 1997, and 34 percent of all finished hogs, up 4 percentage points from 1997 (table 9).

Table 9.—Use of production contracts as a share of U.S. hog production, 1997 and 2000

Size class (1000 head)	All hogs <sup>1</sup>				Hogs under contract <sup>2</sup>			
	Farrowed by contractors		Finished by contractors <sup>3</sup>		Farrowed		Finished	
	1997	2000	1997	2000	1997	2000	1997	2000
	<u>Percent</u>							
1–49	10	5	14	9	1	2	8	3
50–499	8	8	9	13	4	7	7	10
500 or more	22	26	22	33	11	13	16	21
Total	40	39	44	55	17	22	30	34

<sup>1</sup>The percentage of U.S. production from operations of producers who use production contracts.

<sup>2</sup>The percentage of contracted hogs that are farrowed or finished in contract facilities (i.e., by someone other than the hogs' owner).

<sup>3</sup>Includes all hogs owned by contractors, whether finished under production contracts for contractors or finished in facilities owned and operated by contractors.

Source: Lawrence, J. and G. Grimes, "Production and Marketing Characteristics of U.S. Pork Producers, 2000," Staff Paper 343, Iowa State University, Department of Economics, August 2001.

## Structure of Hog Packing

Concentration has increased in the pork packing industry. The share of U.S. hog slaughter accounted for by the four largest hog packers rose from 34 percent in 1980 to 46 percent in 1995 and 55 percent in 1996, and has remained about the same since then (table 10). The increase in concentration also is reflected in the Herfindahl-Hirshman Index (HHI). The HHI equals the sum of each firm's squared percentage market share. HHI values for pork packing rose from 436 in 1980 to 1020 in 1999. The Department of Justice and Federal Trade Commission view markets as moderately concentrated if HHI values are between 1000 and 1800 and highly concentrated if HHI values exceed 1800.<sup>9</sup> The 1999 HHI of 1020 indicates that the pork industry is moderately concentrated.

<sup>7</sup> Martinez, S. W., *Vertical Coordination in the Pork and Broiler Industries: Implications for Pork and Chicken Products*, Agricultural Economic Report No. 777, ERS-USDA, April 1999.

<sup>8</sup> Lawrence, J. and G. Grimes, "Production and Marketing Characteristics of U.S. Pork Producers, 2000," Staff Paper 343, Iowa State University, Department of Economics, August 2001.

<sup>9</sup> The Horizontal Merger Guidelines issued by the Department of Justice and the Federal Trade Commission state, "mergers producing an increase in the HHI of less than 100 points in moderately concentrated markets post-merger are unlikely to have adverse competitive consequences and ordinarily require no further analysis. Mergers producing an increase in the HHI of more than 100 points in moderately concentrated markets post-merger potentially raise significant competitive concerns depending on the factors set forth in Sections 2-5 of the Guidelines." Department of Justice and the Federal Trade Commission, *Horizontal Merger Guidelines*. [http://www.usdoj.gov/atr/public/guidelines/horiz\\_book/15.html](http://www.usdoj.gov/atr/public/guidelines/horiz_book/15.html), April 2, 1992 (as amended April 8, 1997).

Table 10.—Hog slaughter concentration, selected years, 1980–2000<sup>1</sup>

	1980	1985	1990	1995	1996	1997	1998	1999	2000
Four-firm concentration (percent) <sup>2</sup>	34	32	40	46	55	54	56	56	56
HHI	436	456	593	769	961	976	1036	1020	NA

NA denotes not available.

<sup>1</sup>Data for 1980, 1985, and 1990 are based on firms' fiscal years as reported to P&SP. Data for 1995–2000 are based on calendar year for federally inspected slaughter.

<sup>2</sup>Percentage of total commercial slaughter accounted for by the four largest firms.

Source: Packers and Stockyards Administration. *Packers and Stockyards Statistical Report*, reporting years 1980, 1985, 1990; Packers and Stockyards Programs, *Packers and Stockyards Statistical Report*, reporting years 1995–99.

Hog slaughter capacity declined from over 408,000 hogs per day in February 1997 to approximately 380,000 hogs per day in fall 2001 (table 11).

Table 11.—Hog slaughter capacity, U.S. hog slaughter plants

	February 1997	February 1998	February 1999	Fall 2000	Fall 2001
Estimated Daily Slaughter Capacity	408,520	415,520	381,920	377,620	381,120

Source: National Pork Board, *Pork Facts 2001/2002*.

## Slaughter and Evaluation Practices

To meet consumer preferences more effectively, and to measure carcass or meat value associated with quality improvements, packers are using several electronic devices to measure desired carcass or meat traits.<sup>10</sup> As consumer preferences for desired meat traits have been identified, tools have been developed to measure the presence of those traits in hog carcasses. Hog slaughtering and procurement practices have changed as a result. Instead of pricing hogs on a liveweight basis, as they have traditionally done, packers increasingly use various measures of carcass characteristics to determine the price for each individual hog. Packers pay producers for delivering hogs with preferred quality traits through a system of premiums and discounts. The technology has resulted in integration of evaluation devices into slaughter lines, requiring additional steps in slaughter procedures.

When packers purchase hogs through carcass merit pricing programs, the application of grading devices affects payment. For example, electronic grading devices may measure and record carcass quality traits, such as backfat and bineye depths. These measurements are used to estimate the percentage of lean meat in a carcass. The lean percentage is then used to determine the payment amount for each individual carcass. Payments to producers are intended to reflect the quality of each carcass.

<sup>10</sup> Meisinger, David, "Pork Quality: Where are we at?" *Being Competitive & Successful in the Pork Industry: Competitive Seminar For Pork Producers*, National Pork Producers Council, Des Moines, IA, 1998, p. 193.

Packers use various devices to estimate the percentage of lean meat in a hog carcass. Additional devices that measure color, pH, and tenderness are in the experimental stage, but have not yet been adapted to current plant line speeds and conditions.

Several packers currently use optical probing devices to measure loin eye and backfat depth in individual hog carcasses. Because backfat reflects more light than is reflected by red meat (muscle), these devices are able to measure both fat and muscle thickness.<sup>11</sup> An equation converts the measurement into percent-lean estimates, which are used to calculate payments to producers.<sup>12</sup>

Another carcass-evaluation device uses ultrasonic sound waves to measure loin eye and backfat depth and muscle mass. Unlike the optical probe, the device is non-invasive. An ultrasonic image is generated that measures every 5 millimeters of the carcass's length, and every 25 millimeters of its width.<sup>13</sup> An equation converts the measurement into percentage-lean estimates needed to calculate payments to producers.<sup>14</sup>

A third type of carcass-evaluation device uses pulse echo ultrasound to measure muscle and backfat depths. This type of device creates a three-dimensional ultrasonic image to estimate fat and muscle mass.<sup>15</sup> Producers are paid on a percent-lean basis or according to the estimated primal meat cuts available from each carcass.

A fourth type of carcass evaluation device uses an electromagnetic field, similar to that used in Magnetic Resonance Imaging (MRI) in medicine, to estimate carcass composition. As a carcass passes through the device, it absorbs electromagnetic energy that allows the device to differentiate between bone, fat, muscle, and skin. The energy absorption is recorded as a bell curve and is used to estimate the weight of primal cuts.<sup>16</sup> The estimated weight of primal cuts is used to determine payments to producers.

## Procurement Methods

Hog packers use a number of procurement methods to obtain hogs for slaughter. In the spot market, producers interacting with packers determine price. Spot market transactions may occur in several venues. A hog producer may sell hogs at an auction, call several packers to search for the highest bid for delivery at the packing plant, or contact a buying station to negotiate a price for a specific lot of hogs.

Prices quoted for hogs delivered to a buying station are lower than prices quoted for hogs the producer delivers to the plant because of transportation costs from the station to the plant. Once a price has been agreed upon, the producer delivers the hogs to the buying

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<sup>11</sup> Berg, Eric P., editor, *Composition and Quality Assessment Procedures*, National Pork Producers Council and American Meat Science Association, Des Moines, IA, 2000.

<sup>12</sup> SFK Technology, *Instruction Manual - Fat-O-Meater S71*, Herley, Denmark, 2001.

<sup>13</sup> SFK Technology, "AutoFom Automatic Carcass Grading," <http://www.sfktech.com/products/measuring.autofom%20extra.html> (March 6, 2002).

<sup>14</sup> SFK Technology, *Instruction Manual - UltraFom System*, Herley, Denmark, 2001.

<sup>15</sup> SFK Technology, *Instruction Manual - AutoFom System*, Herley, Denmark, 2001.

<sup>16</sup> MQI TOBEC Inc., *MQI/TOBEC Lean Content Analysis Systems*, Springfield, IL, 1999.

station. The hogs are weighed and tattooed at the station and then shipped to the plant. For liveweight purchases, the producer receives a check at the time of delivery; for carcass merit purchases the producer has to wait until after slaughter, when the carcasses have been graded at the plant. The number of buying stations is declining and the functions of buying stations is changing from a price-determining location for hogs to a hog collection point for contract producers who prefer not to deliver to the plant.

The majority of hogs are no longer traded on the spot market. Grimes reports in a 2001 study of hog marketing contracts that packers' use of spot markets dropped from 62 percent in 1994 to 17 percent in January 2001.<sup>17</sup> Instead, the majority of slaughter hogs are traded through non-spot market methods including packer feeding operations, production contracts with producers, and marketing contracts. These methods will be described below.

Packer ownership of hogs has increased in recent years. A 2000 survey of the largest pork packers, which included 10 of the 13 largest packers, found that packers produced 6.4 percent of their hogs in 1994, and 9.9 percent in 1997.<sup>18</sup> Among 11 pork packers surveyed in 2001, the number of hogs produced by packers increased from 24 percent in 2000 to 27 percent in 2001.<sup>19</sup>

The most common procurement methods used by hog packers are marketing contracts and production contracts. Use of production and marketing contracts has increased in recent years. Producers tend to rate higher prices as a primary advantage of contracts.<sup>20</sup> Risk sharing is a highly ranked motivation among both producers and packers for entering into a contract (table 12). Contracts allow each party to share risks associated with price, supply, quality, or income. Contracts analyzed by P&SP range in length from 3 months to 20 years, with most averaging about 7 years. Some contracts are open-ended, with a provision that requires one party to give notice of termination up to 1 year before actual termination. According to NPPC, a producer generally can expect to pay off loans for capital inputs within 10 years of continuous hog production.<sup>21</sup>

Generally, a production contract specifies the time and quantity for delivery of finished hogs to the contractor. Production contracts also outline specific care and feeding requirements, waste disposal, and payment calculations. Contractors entering production contracts with producers include packers, other producers, and agricultural corporations not involved in hog slaughter. In production contracts, contractors provide the hogs and retain their ownership, and contract with producers for the hogs' care and raising.

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<sup>17</sup> Grimes, Glenn, "Hog Marketing Contract Study January 2001," University of Missouri and National Pork Board. <http://agebb.missouri.edu/mkt/vertstud.htm> (March 12, 2001).

<sup>18</sup> Grimes, Glenn and Steve Meyer, "2000 Hog Marketing Contract Study," University of Missouri and National Pork Producers Council, March 7, 2000.

<sup>19</sup> Grimes, Glenn, "Hog Marketing Contract Study January 2001," University of Missouri and National Pork Board. <http://agebb.missouri.edu/mkt/vertstud.htm> (March 12, 2001).

<sup>20</sup> Lawrence, John D. and Glenn Grimes, "Production and Marketing Characteristics of U.S. Pork Producers, 2000," Staff Paper No. 343, Department of Economics, Iowa State University, August 2001.

<sup>21</sup> National Pork Producers Council, *Guide to Contracting*, 2000.

Table 12.—Motivations for contracting

Production contracts		Marketing contracts	
Contractor	Contract grower	Packer	Producer
Expand operation	Reduce price risk	Supply assurance	Shift price risk
Improve health	Specialization	Quality assurance	Market assurance
Decrease production risk	Investment alternative	Shift price risk	Reduce marketing management
Increase profits	Means of entry into hog farming		Supply assurance
	Income diversification		

Source: National Pork Producers Council, *Guide to Contracting*, 2000.

Generally, a marketing contract specifies the types of hogs to be delivered by the producer, the number of hogs to be delivered each month, and the method or formula used to determine price. Marketing contracts enable packers to control both the carcass quality characteristics and the number of hogs delivered for slaughter during a given time period. Unlike production contracts, marketing contracts specify the terms for the sale of producer-owned hogs to a packer.

As the number of hogs raised under production contracts or sold under marketing contracts has increased, the contracts themselves have undergone significant changes. Contract language has become more complex. The contracts contain more requirements relating to genetics and feed use, and contract prices are more likely to be based on markets other than swine such as feed grain markets. Various pricing methods, including ledger contracts (discussed below) have been put into use in contracts.

### Pricing Methods

A 2001 survey of 11 large pork packers revealed that spot market purchases accounted for 25.7 percent of those packers' total slaughter in January 2000, and 17.3 percent in January 2001.<sup>22</sup>

Large farms produce most U.S. hogs, and deliver directly to the packer. The prices for hogs from large farms generally are determined on a formula, or carcass-merit, basis.<sup>23</sup> According to reports packers filed with GIPSA, the share of hogs procured on a carcass-merit basis increased from 42.9 percent of all procurement in 1995 to 74.6 percent in 1999.<sup>24</sup> In many cases, the formulas have base prices that are referenced to a publicly reported spot market price. In other cases, the base price is referenced to a futures market price or publicly reported prices for major feed ingredients such as corn. The base price also may be referenced to a price that is not publicly reported, such as a plant average price.

<sup>22</sup> Grimes, Glenn, "Hog Marketing Contract Study January 2001," University of Missouri and National Pork Board, March 12, 2001.

<sup>23</sup> McDonald, James M., et al., *Consolidation in U. S. Meatpacking*, Agricultural Economic Report No. 785, ERS-USDA, February 2000.

<sup>24</sup> Packers and Stockyards Programs, *Packers and Stockyards Statistical Report 1999 Reporting Year*, GIPSA SR-02-1, GIPSA-USDA, January 2002.

Some contracts, like window or ledger contracts, use pricing methods that provide for sharing risks of price variation between the packer and producer. Window contracts specify ceiling (maximum) and floor (minimum) prices. Ledger contracts establish ceiling and floor prices and have the effect of loaning packers the difference between the market price and ceiling price when the prices are above the ceiling price, and have the effect of loaning producers the difference between the market price and the floor price when prices are below the floor price. Regardless of the method for determining the base price, premiums or discounts usually are applied based on specified quality characteristics of the carcass or on other criteria.

In a 2001 survey, packers reported using formula pricing referenced to publicly reported spot market prices for 54.0 percent of their hog purchases, up from 47.2 percent in 2000 and 39.1 percent in 1997 (table 13).<sup>25</sup> Packers purchased 5.7 percent of their hogs in 2001 using a fixed price referenced to a futures market price, down from 8.5 percent in 2000. Purchases using a fixed price referenced to a feed ingredient price increased to 16.2 percent in 2001, up from 12.3 percent in 2000. Purchases under programs using ledger pricing increased from 9.8 percent in January 2000 to 11.8 percent in January 2001.

Table 13.—Percentage of U.S. hogs procured through various pricing methods

Pricing method	Jan. 1997	Jan. 1999	Jan. 2000	Jan. 2001
		<u>Percent</u>		
Spot market purchases	43.4	35.8	25.7	17.3
Total non-spot market purchases	56.6	64.2	74.3	82.7
Fixed price tied to a futures market price	2.9	3.4	8.5	5.7
Fixed price tied to feed price	5.3			
No ledger maintained		2.9	3.3	6.4
Ledger maintained		6.9	9.0	9.8
Window, risk sharing	3.1			
No ledger maintained		3.6	3.8	4.6
Ledger maintained		1.0	0.8	2.0
Formula other than above	39.1	44.2	47.2	54.0
Other (packer owned, internal transfer) <sup>1</sup>	6.1	2.3	1.7	0.2

Source: Grimes, Glenn, "Hog Marketing Contract Study January 2001," University of Missouri and National Pork Board, March 12, 2001.

<sup>1</sup> Many packers that produce hogs price them using a marketing contract with the production unit of their firm. These transfers are included in the pricing categories in the table according to how a price is set when transferring the hogs from the production unit.

In 1999, Congress enacted the Livestock Mandatory Reporting Act of 1999 (MPR), which requires the reporting of market information by packers who annually slaughter an average of 125,000 cattle or 100,000 swine, or slaughter or process an average of 75,000 lambs. Importers who annually import an average of 5,000 metric tons of lamb meat

<sup>25</sup> Grimes, Glenn, "Hog Marketing Contract Study January 2001," University of Missouri and National Pork Board. March 12, 2001.

products are also required to report.<sup>26</sup> USDA's Agricultural Marketing Service implemented the mandatory price reporting program on April 2, 2001.<sup>27</sup>

Since the mandatory reports duplicated information contained in the voluntary reports, most of the voluntary reports were discontinued on April 11, 2001. Packers and contract producers developed contingency plans for days that prices normally used as base prices in the contracts were not reported because of technical or confidentiality reasons. For example, some contracts included clauses that specified alternative hog market prices to be used. Some producers and packers changed their contracts to use alternative pricing methods such as basing price on cost of production or cost of corn or soybeans. Other changes included using alternative reference prices such as pork meat prices reported in the National Carlot Pork Report or the USDA Blue Sheet.

### **Packer Control of Hog Quality**

Packers develop standards for hogs targeted to specific meat markets. Packers shipping pork to foreign countries, for instance, may require a specific color or pH level in the meat. Packers marketing meat products to calorie-conscious consumers may have another set of standards. To meet these standards, packers place specific requirements in marketing contracts.<sup>28</sup> Packers identify producers to participate in long-term contracts based on the quality of hogs previously delivered. Packers may specify genetic lines and feeding programs. Producers may weigh the costs of implementing such programs with the benefits of improved feed efficiencies or daily weight gain. Producers who choose to enter a marketing contract with a packer under one of these programs must tailor their production methods, including procuring a specific genetic line of hogs, to best meet the required standards. Such programs may limit a producer's flexibility if a packer's program specifies production methods that the producer is not using.<sup>29</sup> Producers may find themselves having to choose between beginning entirely new production operations with new hogs and feeding methods to secure a contract, or seeking other packers interested in purchasing the type of hogs they already produce.

Meat quality characteristics can include appearance, tenderness, juiciness, and nutritional value. Most carcass-merit pricing programs provide higher payments for lean, meaty hogs of a desired weight, but the programs usually do not measure other quality characteristics. According to a survey of midwestern packers, 15 percent of all hogs produce pale, soft, exudative (PSE) pork. PSE pork is an unappealing pale, soft, watery meat produced by hogs with two copies of the halothane gene.<sup>30</sup> The presence of the halothane, or "stress," gene in hogs improves yield and increases loin size, but can generate problems with meat color and toughness. PSE pork often must be priced below non-PSE pork at retail.

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<sup>26</sup> Livestock and Grain Market News Branch, *Livestock Mandatory Reporting*, 7 CFR part 59 [No. LS-99-18], RIN 0581-AB64, Federal Register, Vol. 65, No. 232, Friday, December 1, 2000, Rules and Regulations, pp. 75464-542.

<sup>27</sup> USDA, "Mandatory Livestock Price Reporting Begins Today," USDA News Release No. 0058.01, April 2001.

<sup>28</sup> Kenyon, David E. and Wayne Purcell, *Price Discovery & Risk Management in an Industrialized Pork Sector*, Department of Agricultural and Applied Economics, Virginia Polytechnic Institute and State University, October 1997.

<sup>29</sup> National Pork Producers Council, *Guide to Contracting*, 2000.

<sup>30</sup> Gibson, John P., "Stressed Pigs Get Better Fitting Genes," Center for Genetic Improvement of Livestock Animal and Poultry Science, University of Guelph, June 1996.

An NPPC study of hog genetics in the 1990s revealed that 12 percent of all maternal line sows carried the halothane gene.<sup>31</sup> Current and developing carcass value pricing programs may not solve the PSE problem. The study indicated that some packers believe the solution may be to enter the seedstock business, develop a genetic line of hogs free of the stress gene, and require producers to use that line.

Several packers have either purchased or made arrangements with genetic seedstock companies to guarantee a supply of quality hogs. Some vertically integrated or coordinated packing firms<sup>32</sup> produce only one or two genetic lines to improve the uniformity of their processed products. Because packers are increasing their use of specific genetic lines, there is reason to believe that they may not be getting the quality of hogs that they want using only carcass merit pricing programs. To get a more uniform meat product, packers require producers to use a specific genetic line. Uniform meat product is frequently defined by lean percentage (the major determinant in most carcass merit pricing programs), constant size of meat cuts, and other quality characteristics including color and pH level.

Swine genetic technology has had a major impact on the hog industry in the past decade.<sup>33</sup> Some large volume producers joined swine genetics programs of independent seedstock firms or acquired new genetic lines through production or marketing contracts with packers or other firms. For example, the National Pig Development (NPD) Company of East Yorkshire, England, developed a line of hogs that are referred to as NPD genetics. Smithfield Foods, Inc. (Smithfield) holds exclusive rights to NPD genetics in the United States and uses them in each of its largest hog production companies: Brown's of Carolina, Inc.; Carroll's Foods, Inc.; and Murphy Farms, Inc.<sup>34</sup> In 1995, Smithfield introduced a new pork product line utilizing its line of NPD hogs. Many U.S. hog producers, including the second largest producer, Seaboard Farms, Inc., utilize genetics from the world's largest swine breeding company, Pig Improvement Company.<sup>35</sup> Farmland Industries, Inc. instituted a "Uniform Pork" program that requires its contract hog producers to use the services of DeKalb Choice Genetics.<sup>36</sup>

The development of research into swine genetics also has attracted new entry into the industry by firms that do not currently produce or slaughter hogs. For example, DeKalb Choice Genetics, a subsidiary of Monsanto Agriculture Co., does not operate a pork packing plant but is the second largest swine genetics company in the United States.<sup>37</sup>

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<sup>31</sup> Kenyon, David E. and Wayne Purcell, "Price Discovery & Risk Management in an Industrialized Pork Sector," Department of Agricultural and Applied Economics, Virginia Polytechnic Institute and State University, October 1997.

<sup>32</sup> A vertically integrated packing firm is one that owns hogs while they are being raised for slaughter, for example, through the use of production contracts. A vertically coordinated firm is one that does not own hogs while they are being raised for slaughter, but coordinates with suppliers for procurement through the use of marketing agreements.

<sup>33</sup> Martinez, S. W., *Vertical Coordination in the Pork and Broiler Industries: Implications for Pork and Chicken Products*, Agricultural Economic Report No. 777, ERS-USDA, April 1999.

<sup>34</sup> Smith, Rod, "Smithfield Restructures Unit to Emphasize Lean," *Feedstuffs*, March 20, 2000.

<sup>35</sup> Smith, Rod, "DeKalb to Offer Accelerated 'Choice' in Swine Genetics," *Feedstuffs*, June 19, 2000.

<sup>36</sup> Kenyon, David E. and Wayne Purcell, *Price Discovery & Risk Management in an Industrialized Pork Sector*, Department of Agricultural and Applied Economics, Virginia Polytechnic Institute and State University, October 1997.

<sup>37</sup> Smith, Rod, "DeKalb to Offer Accelerated 'Choice' in Swine Genetics," *Feedstuffs*, June 19, 2000.

# Pork Marketing

## Producer Cooperative Marketing

Hog producers have increased their interest in cooperatives, particularly in new-generation cooperatives.<sup>38</sup> The Capper-Volstead Act provides cooperatives limited exemption from antitrust laws so that producers may collectively market their products.<sup>39</sup> A Capper-Volstead marketing cooperative is an association in which: (1) the stockholders or members are producers who produce the commodity handled by the cooperative and whose product makes up more than 50 percent of the value of commodity handled by the cooperative; (2) earnings of the cooperative are paid out to the members in proportion to how much they use the cooperative; and (3) the formal governance of the business by the stockholders is structured “democratically” in the sense that voting power is not proportional to equity investment.<sup>40</sup>

New-generation cooperatives typically have a closed membership structure and are more difficult to join but are often easier to leave than traditional cooperatives. Producers usually are required to make substantial up-front investments which are linked to rights and responsibilities to deliver specified numbers of livestock for slaughter to the packing plants used by the cooperatives.<sup>41</sup> Several pork organizations have proposed launching cooperative ventures. In 2001, one new-generation cooperative purchased a slaughter facility in Iowa.<sup>42</sup> Two other new-generation cooperatives, in Nebraska and Illinois, announced plans in 2001 to open slaughter facilities.<sup>43</sup>

New-generation cooperatives tend to be involved in several activities along the marketing chain, particularly downstream. New-generation pork cooperatives seek to identify existing and new markets for swine, pork, and pork products, and to enter relationships with packers, processors, food service operations, retailers, and exporters to enhance the value of their members’ production. Many new-generation cooperatives develop systems and partnerships to maintain control of their product as far down the marketing chain as possible, including the development of an independent producer brand or by producing specialized products and packaging for others.<sup>44</sup>

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<sup>38</sup> Information on cooperatives in this section is based primarily on: Matson, James and Brad C. Gehrke, “Last Train Leaving?” *Rural Cooperatives*, BS-USDA, September/October 2000, pp. 6–9; Duffey, Patrick, “Generating Rural Progress,” *Rural Cooperatives*, RBS-USDA, July/August 2000, pp. 16–21.

<sup>39</sup> Volkin, David, “Understanding Capper-Volstead,” Cooperative Information Report 35, Rural Business and Cooperative Development Service, USDA, June 1985 (reprinted April 1995).

<sup>40</sup> The limitation on “voting one’s equity” may be in the form of one-member/one-vote rule, or voting may be proportional to patronage or stock ownership, but subject to some limitations such as restricting any one member from having more than 5 percent of the total votes.

<sup>41</sup> Each membership share may, for example, give the member the right to market one head of livestock per year through the co-op. The share may also require the member to deliver one head per year, whether from the member’s own production or from another source.

<sup>42</sup> Marbery, Steve, “Hog Industry Insider: Co-op Buys Plant,” *Feedstuffs*, July 9, 2001.

<sup>43</sup> Marbery, Steve, “Hog Industry Insider: Nebraska Equity Drive,” *Feedstuffs*, February 2, 2001; Marbery, Steve, “Co-op Chooses Site for Illinois Hog Plant,” *Feedstuffs*, October 29, 2001.

<sup>44</sup> Staatz, J. M. “The Structural Characteristics of Farmer Cooperatives and Their Behavioral Consequences,” in *Cooperative Theory: New Approaches*, Jeffrey S. Royer (ed.), Cooperative Management Division, Agricultural Cooperative Service, USDA, July 1987.

## **Pork Checkoff Program**

The purpose of the Pork Checkoff Program is to strengthen the position of pork in the marketplace and to maintain, develop, and expand markets for pork and pork products.<sup>45</sup> The program is funded by a mandatory assessment of 0.45 percent on the market value of domestic and imported hogs and pigs and an equivalent amount on imported pork and pork products. During 1998 and 1999, an advisory referendum was conducted to determine industry support for continuation of the Pork Checkoff Program. The outcome of the referendum indicated that pork producers did not support continuation of the Checkoff. Based on results of the advisory referendum, the program was to be terminated, but an injunction was sought and granted to continue the program. As part of a settlement agreement following litigation, the termination of the Checkoff was suspended with the requirement of several significant changes in the relationship between the National Pork Board (NPB) and its general contractor, the NPPC.<sup>46</sup>

The restructuring separates the NPB and the NPPC. It requires the NPB to: Employ its own staff, including the CEO and CFO; manage separate contracts for promotion, research, and consumer information projects; maintain separate office operations from NPPC; and maintain separate communications from NPPC. The NPB will have 2 years to demonstrate to producers and importers the value of the Checkoff program to the industry. In 2003, USDA will conduct a survey to determine whether 15 percent of hog producers and importers are in favor of conducting a referendum to decide whether to continue the program. If the required number of producers and importers request a referendum, AMS would hold the referendum within 1 year.<sup>47</sup>

## **Product Development**

A focus on pork product development by packers has led to a trend away from commodity pork and toward further-processed, value-added pork products. Value-added products can include partially prepared, case-ready, or branded pork. Packers add value to pork by providing products that consumers can prepare quickly and easily. For example, many traditional products, such as bacon and sausage, are now available in a pre-cooked or microwaveable form. Whole muscle products, such as loins, are available seasoned or marinated and ready-to-cook.

Packers use brand names to build consumer loyalty. Packers may use one or more brand names when marketing convenience products, or when marketing product lines to the HRI trade. Brand names are used in marketing case-ready fresh pork products. Case-ready pork provides benefits to retail outlets by reducing skilled labor requirements and by providing a uniform product. Case-ready pork is cut and trimmed to consumer size cuts, and packaged by the packer rather than the retail establishment.

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<sup>45</sup> Agricultural Marketing Service, Pork Promotion, Research and Consumer Information Order. <http://www.ams.usda.gov/lsg/mpb/pork/porkchk.htm> (February 6, 2002).

<sup>46</sup> Clayton, K. "USDA's Decision to Continue the Pork Checkoff Program Under Settlement That Requires Program Restructuring," February 2001. <http://www.ams.usda.gov/lsg/mpb/statement.htm> (February 28, 2001).

<sup>47</sup> Agricultural Marketing Service, Press Release No. 0037.01, February 2001. <http://www.usda.gov/news/releases/2001/02/0037.htm>, (February 28, 2001).

## **E-commerce**

The past year has brought many changes in e-commerce for pork companies. There have been many bankruptcies throughout the e-commerce industry, but there is still a market for e-commerce in the pork industry. E-commerce companies are focusing on improving personal relationships with existing customers and using the Internet for streamlining the supply chain (fulfilling orders on-line).<sup>48</sup> Instead of reinventing how companies do business, e-commerce companies are trying to help their customers do business easier and at less cost. (See the discussion of E-commerce in the section on Changing Business Practices in the Cattle Industry for examples of e-commerce companies and alliances that have been involved in both beef and pork marketing.)

E-commerce in swine trading does not appear to be as popular as once predicted. Few companies are selling swine on the Internet, and the ones that do generally just give price lists and contact information for potential buyers. However, at least one firm (Farm.com) offers a swine marketplace where buyers and sellers deal in feeder pigs, cull sows, cull boars, and the sale of feed and grain.

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<sup>48</sup> Nunes, Keith, "The Crash of the Titans," *Meat & Poultry*, September 2001.

## **Operations or Activities in the Cattle and Hog Industries That Raise Concerns Under the Packers and Stockyards Act**

This section identifies aspects of the cattle and hog industries that appear to raise concerns under the P&S Act. The issues are grouped into the following areas: Concentration and structural change, changes in livestock pricing and procurement, changes in vertical and horizontal coordination, technological change in packing plant operations and marketing, and fair trade and financial protection.

### **Concentration and Structural Change**

GIPSA frequently receives requests to prohibit controversial mergers and acquisitions involving leading firms in the cattle and hog industries. Authority to challenge mergers prior to their consummation, however, rests with the Department of Justice and the Federal Trade Commission through the pre-merger notification requirements of the Hart-Scott-Rodino Antitrust Improvements Act of 1976.

The P&S Act does not prohibit concentration, vertical integration or coordination, or other changes in the structure and organization of the cattle and hog industries, per se. While the four leading steer and heifer slaughtering firms account for over 80 percent of steer and heifer slaughter, and the four leading hog slaughtering firms account for 56 percent of total hog slaughter, at the time of this writing there is no evidence that these packers are using market power to engage in practices prohibited by the P&S Act. However, if firms use their increased market power to engage in behavior prohibited by the P&S Act, GIPSA will investigate and take appropriate action.

### **Changes in Livestock Pricing and Procurement**

The concerns expressed by certain industry members, especially producers, about industry concentration and structure generally stem from concerns about the potential for large packers to gain market power that would enable them to engage in unfair and anti-competitive behavior. Two USDA advisory committees have recommended that USDA take steps to strengthen its ability to enforce the competitiveness provisions of the P&S Act.<sup>1</sup> Some industry participants look to USDA to investigate and address a wide range of concerns they associate with large packers, especially livestock procurement issues.

GIPSA must be able to prove that a specific practice will lead to the types of anti-competitive or other practices that are prohibited by the P&S Act before it can file a disciplinary complaint or to promulgate a regulation prohibiting such activity. Most issues involving competition and potentially anti-competitive practices are complex and interrelated. Extensive data collection and sophisticated economic analyses are often

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<sup>1</sup> USDA Advisory Committee on Agricultural Concentration, *Concentration in Agriculture, A Report of the USDA Advisory Committee on Concentration*, AMS-USDA, June 1996; National Commission on Small Farms, *A Time to Act*, Miscellaneous Publication 1545, USDA, January 1998.

required to fully understand the reasons for and implications of the practices, as well as the potential benefits and harms to attribute to such practices.

**Packers Acting in Concert to Restrict Competition**—Some members of the industry, especially producers, have expressed concerns about possible concerted action by meat packers to reduce competition. In some cases, concerns are expressed about wide-ranging developments that cut across broad industry segments, such as allegations of packer behavior leading to low hog prices during December 1998 and January 1999. In other cases, concerns address specific circumstances involving narrow industry segments, such as why few packers bid on cattle at a particular feedlot. These circumstances do not necessarily suggest that firms are acting in concert to restrict competition and instead may be attributable to normal supply and demand forces, competitive bidding processes, or personal relationships that have developed over time between packers and livestock sellers.

Section 202 of the P&S Act makes it unlawful for packers to engage in any unfair, unjustly discriminatory or deceptive act or practice and, among other things, prohibits any action with the purpose or effect of manipulating prices or restraining commerce. Section 202 also makes it unlawful to “conspire, combine, agree, or arrange, with any other person (1) to apportion territory for carrying on business, or (2) to apportion purchases or sales of any article, or (3) to manipulate or control prices,” or to “conspire, combine, agree or arrange with any other person to do, or aid or abet the doing of, any act made unlawful” by other subdivisions of Section 202.<sup>2</sup> Past analyses by GIPSA's Packers and Stockyards Programs (P&SP) of packers' livestock procurement patterns have not uncovered any evidence suggesting that packers engaged in such activities in violation of the P&S Act.

**Short Trading Window**—Producers allege that there is a short window during which trading of fed cattle occurs. Some cattle producers and market observers contend that most spot market cattle transactions occur during a relatively short period each week, often described as a 15- or 30-minute window. The bidding process for fed cattle normally begins early on Monday mornings when packer buyers visit feedlots to view cattle for sale and the price discovery process continues during the week as buyers and sellers assess market conditions, followed by rapid consummation of many transactions once market participants believe the market price has been discovered. P&SP's investigations have found that, while more sales take place on some days than on others, sales take place on every business day of the week. Consummation of many transactions during a short time interval may be the result of normal competitive behavior in an environment in which buyers and sellers can communicate with each other very quickly, and does not necessarily indicate behavior in violation of the P&S Act.

**Shared Agents**—It is common practice for either an independent buyer to represent multiple packers, or packers to represent one another, at livestock auctions. This practice is most prevalent in the market for cull livestock. Auction market owners and livestock sellers have raised concerns that the use of these buying collaborations reduces the

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<sup>2</sup> 7 U.S.C. 192.

number of competing buyers. P&SP investigates complaints about buying collaboration at livestock markets, and takes action as warranted.

**Pricing Methods**—Cattle and hog buyers use a variety of methods to establish base prices in formulas used for marketing agreements and other contracts. The base price may be calculated from livestock, meat, or feed prices reported by USDA Market News or other public organizations such as the Chicago Mercantile Exchange, or to internally generated prices such as the average price paid by a packer. Some agreements for cattle guarantee the seller a price equal to the “top price” reported in a region. Proponents of these pricing mechanisms assert that they reduce transaction costs by reducing the need to monitor market conditions and prices. They believe these methods provide sellers some assurance of receiving a price that is representative of the current market price.

These methods of livestock pricing also raise concerns, however. Sellers may have inadequate information about all of the factors that may influence base prices, and some producers question whether packers are able to influence the base price. If the price a packer pays for livestock purchased under a contract or marketing agreement is influenced by the prices that same packer pays for livestock purchased in the spot market, then that packer may have an incentive to avoid aggressive competition in the spot market. If the base price is linked to publicly reported prices, the packer may have an incentive to influence those reported prices by not providing full and accurate information.

USDA’s Agricultural Marketing Service (AMS) is responsible for enforcement of the Mandatory Price Reporting law (discussed below), but P&SP has jurisdiction over any use of price reporting by packers that results in a violation of the Packers and Stockyards Act. An analysis of fed-cattle procurement conducted as part of a major investigation of fed-cattle procurement in the Texas Panhandle in 1995 and 1996 did not find evidence that packers altered base prices by influencing the average prices paid by the plants in the spot market.<sup>3</sup> The analysts reported, however, that when formula prices are based on plant averages, packers might have an incentive to manipulate the base through strategic conduct in the spot market or by erroneously calculating plant-average prices. Others, including some academic economists, reach similar conclusions about the incentives for packers to manipulate internal prices under such pricing mechanisms.<sup>4</sup> P&SP monitors this issue in its monitoring and investigation of livestock procurement by packers.

**Thin Spot Markets**—Increased use of various production and marketing contracts has reduced the number of livestock sold through spot markets. Although this is a concern in both cattle and hog markets, the change is most pronounced in hog markets because a smaller proportion of hogs is traded on the spot market. A joint study by the University of Missouri and the National Pork Board found that packers’ spot market purchases made up only 17 percent of all of their hog purchases during January 2001, but prices of hogs

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<sup>3</sup> Schroeter, John R., and Azzeddine Azzam, “Econometric Analysis of Fed Cattle Procurement in the Texas Panhandle,” Iowa State University and University of Nebraska-Lincoln, November 1999.

<sup>4</sup> Purcell, Wayne. “White Paper on Status, Conflicts, Issues, Opportunities, and Needs in the U.S. Beef Industry,” Research Institute on Livestock Pricing, Bulletin 5-99, Virginia Tech, May 1999.

purchased under contracts often are based on spot market prices.<sup>5</sup> According to that study, more than one-half of contract hog purchases in January 2001 used a formula based on publicly reported spot market hog prices. Producers are concerned that the potential exists for packers to influence prices on the spot market, resulting in lower prices for hogs traded on the spot market or under contracts when the contract price is based on publicly reported prices. The concern is increased if only one or two packers purchase in a particular region.

When spot market transactions account for a small share of total volume traded in a particular market, the market is considered to be a thin market. If buying activity is concentrated among a few firms and selling activity is not, buyers in thin markets may have the potential to influence prices. That potential, however, may be constrained if adequate information on prices is available from other markets. Available research suggests that prices in widely dispersed U.S. markets have been closely linked.<sup>6</sup>

Economic theory suggests that if markets become so thin that they become inefficient, market participants are likely to shift to more reliable pricing bases. For example, buyers and sellers might use futures market prices or a grain or feed market price to establish contract prices for livestock. Investigations conducted by GIPSA have found that prices in meat, grain, and futures markets are being used in some pricing formulas for cattle and hogs. Nonetheless, GIPSA monitors packer behavior in order to identify instances when thin markets may facilitate price manipulation, collusion, or other anti-competitive behavior in violation of the P&S Act.

**Mandatory Price Reporting**—Congress enacted the Livestock Mandatory Reporting Act of 1999.<sup>7</sup> On April 2, 2001, USDA's Agricultural Marketing Service implemented a Livestock Mandatory Price Reporting System (MPR). Prior to its implementation, packers and producers voluntarily reported market information to regional USDA offices that disseminated information through daily and weekly reports to the public. Under the new program, larger packers and importers are required to report to USDA the details of all transactions involving purchases of livestock and imported boxed lamb cuts, and the details of all transactions involving domestic and export sales of boxed beef cuts, sales of domestic and imported boxed lamb cuts, and sales of domestic lamb carcasses. AMS conducts routine and regular visits to the plants covered by MPR to verify compliance.

AMS revised its reporting guidelines on August 20, 2001, allowing it to publicly report more price information. AMS estimates that it reports price information on over 90 percent of federally inspected slaughter of fed cattle and hogs, over 80 percent of federally inspected slaughter of sheep and lambs, and 90 percent of the information required to be reported by packers on negotiated boxed beef and negotiated lamb

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<sup>5</sup> Grimes, Glenn, "Hog Marketing Contract Study January 2001." University of Missouri and National Pork Board, March 12, 2001.

<sup>6</sup> Economic Research Service, *Economic and Statistical Assessment of Hog Assembly, Shipping, and Prices in the Eastern Corn Belt—Final Report*, Report to Packers and Stockyards Programs, GIPSA-USDA, 1995; Hayenga, M. L., et al., "Definition of Regional Cattle Procurement Markets," GIPSA-RR 96-1, May 1996.

<sup>7</sup> Livestock and Grain Market News Branch, *Livestock Mandatory Reporting*, 7 CFR part 59 [No. LS-99-18], RIN 0581-AB64, *Federal Register*, Vol. 65, No. 232, Friday, December 1, 2000, Rules and Regulations, pp. 75464-542.

carcasses and cuts. Pork sales are not subject to mandatory price reporting, and AMS estimates that it reports price information on less than 5 percent of all pork production.

A number of livestock procurement contracts and agreements use the AMS price series in pricing formulas used to determine prices paid to livestock sellers. MPR eliminated some of these price series. GIPSA monitors the adjustments packers have made and continue to make in their pricing formulas in response to AMS' price reporting changes in order to help assure that producers are properly notified of the changes and to guard against other possible violations of the P&S Act.

## **Changes in Vertical and Horizontal Coordination**

For many years, livestock sellers took their animals to terminal stockyards and auction markets where a number of buyers bid on and purchased livestock. In recent decades, trade in slaughter livestock moved away from these organized public markets toward various forms of direct trading between buyers and sellers. For many years, direct trading has occurred primarily through spot market transactions, in which livestock are neither offered to nor purchased by packers until the animals are ready for slaughter. In recent years, alternative means have emerged to coordinate the production, marketing, and trade of slaughter livestock. For example, increasing numbers of cattle and hogs are traded through various types of marketing agreements and forward contracts. Some producers also are forming cooperatives, which often involve both horizontal and vertical coordination, to increase their involvement in downstream activities. The decline in the use of spot markets and increase in the use of alternative forms of vertical coordination have raised concerns about potential adverse effects on competitive behavior in the livestock and meatpacking industries.

**Captive supplies**—Packer use of captive supplies has been a concern for some industry participants. There is some confusion about what the term “captive supplies” means. Some define captive supplies in terms of commitment of animals to a packer prior to the time when the animals are ready for slaughter. Some define captive supplies in terms of how the livestock are priced and, thus, include purchases in which the final price is not known at the time the agreement is entered. Under this definition, livestock purchased for immediate delivery and priced on a carcass-merit basis would be considered captive supplies. GIPSA considers captive supplies to be livestock that a packer owns or has a contract to purchase before the animals are ready for slaughter. More specifically, GIPSA defines captive supply as livestock owned or fed by a packer more than 14 days prior to slaughter, livestock procured by a packer through a contract or marketing agreement that has been in place for more than 14 days, or livestock otherwise committed to a packer more than 14 days prior to slaughter.

Controversy surrounding the use and effects of captive supplies is especially prominent in the fed-cattle industry, but parallel concerns exist in the hog industry as well. Opponents of the use of captive supplies are especially critical that cattle procured by packers using these methods are not offered for sale in an open public manner. They argue that captive supplies depress prices paid for fed cattle by reducing the number of cattle that a packer

must procure on the spot market and reduce the packer's aggressiveness in bidding for the remaining supplies of fed cattle. Some livestock producers oppose the use of captive supplies because they do not want to enter into forward-sales arrangements with packers and are concerned that their spot market opportunities will diminish if captive supply use increases. Certain producers, especially small producers, have expressed a concern that if competition necessitates their participation in forward-sales agreements, they would be unable to obtain satisfactory terms or they would be excluded from the most favorable agreements.

Other industry participants and observers contend that captive supplies do not appreciably affect spot market prices. These individuals point out that captive supplies do not alter the total supply of, or demand for, livestock. Proponents of the use of captive supplies argue that captive supplies merely shifts the distribution of purchasing activity between spot markets and contract markets. Many livestock producers and university economists believe that captive supplies reduce transactions costs and improve price signals that reflect differences in animal quality.<sup>8</sup> They argue that captive supplies are forward sales arrangements that are critical to the long-term health of the beef and pork industries and are necessary to improve coordination of production with changing consumer preferences.

Little research has examined whether cattle sold through captive supply arrangements are of higher quality than cattle sold on the spot market. Although some research suggests that cattle obtained through marketing agreements may be of higher quality than cattle obtained through the spot market, the research results overall reveal that the issue is not fully resolved.<sup>9</sup>

Concerns about the possible effects of captive supplies are complicated by questions about the accuracy of publicly available captive supply statistics. In response, the Conference Report on USDA's fiscal year 2001 appropriation directed the Secretary of Agriculture to conduct a comprehensive study on the issue of captive supplies, with the following instructions:

In particular, the Secretary is instructed to examine and report on whether or not the cattle that are procured pursuant to a captive supply arrangement by a packer's non-reporting subsidiary, affiliate and owners, officers and employees are being included in the percentages reported as captive supply. The report shall also include the reasons why GIPSA's annual

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<sup>8</sup> Purcell, Wayne, "White Paper on Status, Conflicts, Issues, Opportunities, and Needs in the U.S. Beef Industry," Research Institute on Livestock Pricing, Research Bulletin 5-99, May 1999; Anderson, J.D. and J.N. Trapp, *Estimated Value of Non-Price Vertical Coordination in the Fed Cattle Market*, Research Bulletin 2-99, Research Institute on Livestock Pricing, Virginia Tech, February 1999; Fausti, S.W., et al., "Value Based Marketing for Fed Cattle: A Discussion of the Issues," *International Food and Agribusiness Management Review* 1(1998):73-90.

<sup>9</sup> See, for example, Williams, Gary, et al., Slaughter Cattle Procurement and Pricing Study Team, "Price Determination in Slaughter Cattle Procurement," GIPSA-RR 96-2, September 1996; Schroeter, John R., and Azzeddine Azzam, "Econometric Analysis of Fed Cattle Procurement in the Texas Panhandle," Report to Grain Inspection, Packers and Stockyards Administration. Department of Economics, Iowa State University and Department of Agricultural Economics, University of Nebraska-Lincoln, November, 1999; and Hayenga, Marvin, et al., "Meat Packer Vertical Integration and Contract Linkages in the Beef and Pork Industries: An Economic Perspective," Iowa State University, May 2000, as cited in Ward, Clement, Marvin Hayenga, Ted Schroeder, John Lawrence, and Wayne Purcell. "Contracting in the U.S. Pork and Beef Industries: Extent, Motiv es, and Issues," paper presented at workshop on The Economics of Contracting in the Agri-Food Sector, Saskatoon, Saskatchewan, December 2000.

“Packers and Stockyard[s] Statistical Report” frequently reports a captive supply percentage much lower than the percentages reported by other entities.<sup>10</sup>

GIPSA conducted this captive supply study and released a report in January 2002, identifying the following points:<sup>11</sup>

- Differences in captive supply statistics available from various organizations result from different definitions of what constitutes captive supply and variations in the geographical coverage of the data collection. P&SP defines captive supply as livestock owned or fed by a packer more than 14 days prior to slaughter, livestock that is procured by a packer through a contract or marketing agreement that has been in place for more than 14 days, or livestock that is otherwise committed to a packer more than 14 days prior to slaughter. P&SP’s captive supply statistics are the only captive supply statistics based on a packer’s forward commitment to purchase livestock before the animals are ready for slaughter.
- P&SP’s analysis of the top four beef packers’ 1999 procurement transactions data showed that the captive supply data the packers reported to P&SP in their Packer Annual Report filings included cattle procured from non-reporting subsidiaries, affiliates, owners, officers and employees to the extent those cattle were procured through a captive supply arrangement.
- P&SP’s review of the top four packers’ 1999 procurement transactions records found that captive cattle supplies accounted for 32.3 percent of the firms’ total slaughter rather than the 25.2 percent originally reported by the packers in their annual report submissions to P&SP. Marketing agreement and forward contract cattle accounted for 23.9 percent of the top four packers’ slaughter, and packer fed cattle accounted for 8.4 percent. The data discrepancies were attributed to misunderstandings about captive supply definitions.

As a result of the findings, GIPSA will publish its definition of captive supply in the *Federal Register*, revise the Packer Annual Report form to clarify reporting definitions, audit future Packer Annual Reports, and report captive supply information in more detail.

**Recordkeeping**—The first Assessment of the Cattle and Hog Industries that GIPSA published noted that there were concerns about a lack of uniformity in records that packers maintain.<sup>12</sup> The report indicated that P&SP intended to address concerns about inadequate recordkeeping. The findings discussed above from GIPSA’s study of captive supply confirmed the wide variation in packer records, but also helped to further define the issues and suggested solutions. The measures that GIPSA is taking as a result of the findings of the study, including clarification of reporting definitions and revision of the

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<sup>10</sup> Conference Report 106-948, 106<sup>th</sup> Congress, 2d Session, to accompany H.R. 4461, October 6, 2000.

<sup>11</sup> Grain Inspection, Packers and Stockyards Administration, *Captive Supply of Cattle and GIPSA’s Reporting of Captive Supply*, GIPSA-USDA, January 11, 2002.

<sup>12</sup> Grain Inspection, Packers and Stockyards Administration, *Assessment of the Cattle and Hog Industries, Calendar Year 2000*, GIPSA-USDA, June 2001.

Packer Annual Report form, will help to improve the quality of data maintained by packers and collected by P&SP. As a part of this initiative, P&SP will also be meeting with packers to obtain additional insights into their recordkeeping systems. This process will enable P&SP to identify any additional measures that may be needed to improve uniformity and completeness of data maintained by packers.

**Market Access and Price Inequalities**—Changes in the organization of livestock production and procurement has raised a number of concerns about producers' access to markets. Some producers are concerned that few packing plants are available in their area, or that they may have difficulty obtaining a production or marketing contract. Some are concerned that packers may not offer contracts to new producers because they have enough animals already under contract and scheduled for delivery.

Some producers and industry observers voice concern that some packers may not offer the same contract terms to smaller volume producers as they do to larger volume producers. Smaller volume producers may lack the ability to negotiate with packers on a level equal to the larger volume producers. Some smaller volume producers are concerned that they may not receive an equal payment for animals of similar quality to those of larger volume producers. However, packers may be willing to pay a volume premium, that is, pay more for steady delivery of a large number of cattle than for steady delivery of a small number of cattle.

Some industry observers and academic analysts suggest that normal economic forces reward more efficient firms and thus motivate consolidation of packing operations and a decline in the number of smaller firms. Economic efficiency arguments indicate that the number of animals in a lot, distance to packing plants, and other factors are legitimate reasons for price differences among producers. Similar arguments are made to explain differences in the availability of production and marketing contracts.

Rulings in a case brought by USDA against IBP, inc. during the 1990s concluded that valid business reasons might justify price differences offered by a packer to different livestock sellers. It is not sufficient for P&SP to prove that a particular marketing arrangement results in higher prices for one group of producers than for others. P&SP must also prove that the higher prices were unjustly discriminatory, gave an unreasonable preference, or were otherwise in violation of the Act.

**Fair Treatment in Contracts**—Increased use of production and marketing contracts for livestock raises producer concerns about potential unfair treatment of livestock producers. For example, some production and marketing contracts may stipulate that the producer must agree to keep the contract terms confidential. As a result, producers are concerned that they may sign the contracts without fully understanding all its terms or without first consulting with an attorney or financial professional for advice. A number of organizations have attempted to address this concern. Some organizations and government agencies post contracts on the Internet, some provide assistance to producers to help them interpret contract terms, and some have encouraged increased use of plain language in contracts and disclosure of contract terms. In deciding how to address

producer concerns about contract terms, the P&S Act must balance the interests of producers against the need for regulation of packers so that contract terms are fair.<sup>13</sup>

## **Technological Change in Packing Plant Operations and Marketing**

As is the case throughout the economy, the development and adoption of new technologies is altering the ways that livestock and meatpacking firms operate and conduct their businesses. A number of recent developments raise concerns under the P&S Act.

**Carcass Evaluation**—Sophisticated electronic devices have been adapted to measure animal carcass quality characteristics. Each packer develops its own procedures for paying on a carcass-merit basis. Packers develop price schedules that meet their particular business and marketing needs. For example, some hog packers pay on the basis of carcass lean percentage, some pay on the basis of the percentage of the carcass produced into primal cuts, and others pay on the basis of the number of pounds of primal meat.

Each packer determines what devices or approaches to use to estimate lean percentage. The hog packing industry uses several different measuring devices and statistical equations for estimating lean percentage. Members of the hog industry have expressed concern that varying estimating procedures in combination with varying pricing formulas make price comparisons among packers difficult. Industry-wide standards have not been developed for electronic carcass-quality measurement devices.

P&SP is working with other USDA agencies; the ASTM International (ASTM) (formerly American Society for Testing and Materials)<sup>14</sup>; State Departments of Weights and Measures; the National Institute of Standards and Technology, Office of Weights and Measures; livestock producers; meat packers; equipment manufacturers; trade groups; academics; and other government agencies to develop industry-wide standards. ASTM-affiliated Committee F10 on Livestock, Meat, and Poultry Evaluation Systems was created to address design specifications, device performance criteria, user requirements, and predictive accuracy.

P&SP believes the development of these standards will increase the likelihood that P&SP and producers can verify the accuracy of payments based on new and developing carcass evaluation techniques.

Committee F10 is reviewing issues related to the use of the equipment (e.g., operator error, measurement resolution, and issues involving the units of measure); the accuracy

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<sup>13</sup> Section 10502 of the Farm Security and Rural Investment Act of 2002 (Title X—Miscellaneous) amended the Packers and Stockyards Act by making any swine contractor, i.e. any person engaged in the business of obtaining swine under a swine production contract for the purpose of slaughtering the swine or selling them for slaughter, subject to the jurisdiction of the Packers and Stockyards Act. Persons contracting with others to raise and care for feeder pigs or other swine that are not intended for slaughter are not covered.

<sup>14</sup> ASTM International, "Name Change Reflects Global Scope," ASTM International Press Release, December 7, 2001. Accessed at [http://www.astm.org/cgi-bin/SoftCart.exe/PRESS\\_RELEASE/astm\\_international.html?L+mystore+uwdz5955+1021869561](http://www.astm.org/cgi-bin/SoftCart.exe/PRESS_RELEASE/astm_international.html?L+mystore+uwdz5955+1021869561).

and ability of equipment to measure product characteristics that are used to predict product quality (e.g., repeatability of measurements, testing accuracy, procedures for testing equipment, and determining tolerance levels regarding inaccuracies); and how operators use the equipment (e.g., the installation and maintenance of equipment and operator training and calibration requirements).

**E-Commerce**—Internet marketing (e-commerce) is a relatively new innovation in the livestock and meatpacking industries. Few Internet sites market hogs and feeder cattle today, but the amount of livestock sold electronically is expected to increase in the future. Packers have begun developing electronic marketing capabilities for meat sales, including forming joint ventures involving multiple packers.

Livestock producers and others have raised concerns about these operations. Many start-up entrepreneurs may not be aware of all of the legal requirements that they must meet in order to operate under the P&S Act, and employees may be making business decisions and handling money without realizing their responsibility for financial accountability. There have been concerns that there is a potential for deceptive practices in Internet transactions, such as inflating the prices of livestock or creating false appearances about the level of bidding activity.

All packers and livestock firms that use e-commerce are subject to the P&S Act to the same extent as firms that only operate traditional brick and mortar businesses. P&SP monitors bidding processes to ensure that Internet firms disclose all bidding rules and customs and otherwise comply with the P&S Act. Electronic marketing operations based on joint ventures could potentially facilitate collusive behavior among the parties to the venture because they provide an easy means for prices, other market information, and buying and selling intentions to be communicated among competitors.

Advocates of Internet marketing argue that Internet marketing has the potential to increase competition. They point out that it can increase the number of active competitors in a market and increase the amount of information available to participants. Internet marketing could lead to significant changes in the way livestock and meat are marketed. P&SP is monitoring developments in and operations of Internet marketing to help assure that all parties are aware of, and conform to, the requirements of the P&S Act.

## **Fair Trade and Financial Protection**

There are several activities that raise concerns with regard to the trade practice and financial protection provisions of the P&S Act.

**String Sales**—When negotiating spot market transactions, some custom feedlots may attempt to require that a packer purchase less desirable livestock as a condition to purchasing more desirable livestock. Alternatively, some feedlots or packers may attempt to impose an “all or nothing” agreement in which the packer buys all (or a specified quantity) of livestock as a single purchase. Under these circumstances, known

as a “string sale,” a single price may be paid for livestock owned by multiple owners, regardless of variation in the quality of the livestock offered for sale by the individual owners. This pricing method may provide some reduction in transaction costs by reducing the number of separate negotiations, but it results in one average price for all livestock. Several feedlot operators reportedly prefer to utilize this pricing method because it avoids the need to explain widely different prices to individual owners of the cattle sold and may help sellers find buyers for cattle that buyers would otherwise avoid.

Critics of string sales point out that, when packers and custom feedlots negotiate string sales, individual livestock owners may not be aware of the conditions of the purchase or sale. An owner of high-value cattle, for example, may receive a lower price when lower value cattle are included in the transaction, and the final price is based on the overall average value of all of the cattle in the transaction. The critics argue that individual owners may, therefore, not receive fair compensation for the value of their cattle.

This concern is potentially amenable to self-regulation. P&SP has not received complaints from producers that feedyards have refused to follow producers’ instructions to sell their cattle on the merits of the producers’ cattle.

**Drug Residues**—Packers are required by USDA’s Food Safety and Inspection Service to perform additional tests for drug residues on meat destined for human consumption as a result of recent reforms in meat inspection. Some animals, particularly cull cattle, may have drug residue levels that cause their meat to be declared unfit for human consumption, substantially reducing the value of the animals. Packers purchase a large number of cull cows at livestock auction markets. Although packers are required by the P&S Act to pay for these animals by the close of the next business day following purchase, they may seek restitution or other relief from the sellers of animals with the drug residues.

**Retaliation**—Many producers have expressed concerns about possible retaliation by packers if producers challenge the terms offered to them by a packer or file a complaint against a packer with P&SP. Although P&SP takes a strong stand against retaliation and vigorously pursues credible allegations of retaliatory behavior in the livestock industry, producers are concerned that they could be out of business before receiving relief. This situation poses a difficult dilemma for producers and for P&SP, because P&SP cannot bring a successful action against a packer on an allegation of retaliation without the cooperation of the target of the alleged retaliation.

**Auction Market Stability**—The financial stability of livestock auction markets has been a concern to producers and others for many years. Financial failure of auction markets result in some livestock sellers not receiving payment for livestock. In 2001, P&SP’s review of auction markets’ annual reports and site investigations of 322 auction markets identified 156 custodial account shortages worth \$7.2 million. Through P&SP’s oversight and enforcement, the markets either fully or partially restored 87 of those custodial account shortages worth \$6.3 million. By comparison, P&SP audited 374 markets in 2000, finding 154 custodial account shortages worth \$9.1 million and

restoring \$5.9 million to the benefit of livestock sellers. The number of registered auction markets did not change substantially over the 2-year period.